

STYLE FILES FOR ASCE-LIKE DOCUMENTS

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ABSTRACT

This document was produced with the L^AT_EX typesetting program using the document class “`ascelike.cls`” and the example file “`ascexmpl.tex`”. The reference section on page 7 was produced with the B^IB^TE_X style “`ascelike.bst`” and the database “`ascelike.bib`”. The objective of these files is manuscripts that roughly comply with the guidelines of the American Society of Civil Engineers. The document class produces either double-spaced manuscripts for journal submissions or manuscripts for conference proceedings, either in ASCE’s older or newer styles. This document serves as a brief guide to `ascelike.cls`, as well as a test of the output that is produced by the input file `ascexmpl.tex`. The package is freely available under the LaTeX Project Public License, version 1.1

Keywords: L^AT_EX, ASCE, document class, `ascelike.cls` (version 2.3), `ascelike.bst` (version 2.2).

INTRODUCTION

The class file “`ascelike.cls`” produces manuscripts that roughly comply with the guidelines of the American Society of Civil Engineers (ASCE). The `ascelike.cls` document class, the bibliographic style `ascelike.bst`, and example files are available on the `ctan` web-site (Kuhn 2011). Although the files are *not* produced by ASCE, its agents, or employees, `ascelike.cls` is now referenced on the ASCE web-site.

This document was created from the file “`ascexmpl.tex`”, which also serves to test the `ascelike.cls` and `ascelike.bst` system.

The program `ascelike.cls` is distributed under the terms of the LaTeX Project Public License Distributed, available from the CTAN archives; either version 1.1 of the License, or any later version. If you modify `ascelike.cls`, you should rename it so that “altered” copies are not later proliferated.

The document class “`ascelike.cls`” requires the following supplementary files:

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- `ifthen.sty`,
- `setspace.sty`,
- `endfloat.sty`, and
- `lineno.sty`.

Without these files, `ascelike.cls` won't work. These files are typically included in L^AT_EX distributions, such as the TeXLive, MikTeX, and MacTeX distributions. All of these files are freely available from the Comprehensive T_EX Archive Network (CTAN) archive, through <http://www.ctan.org> or <http://www.tug.org>, although they may need to be unbundled from a `*.dtx` file. If one of these files is not installed as part of your T_EX system, then download the file from the CTAN archive and place it in the same folder as your manuscript files. On Debian GNU/Linux systems, the `setspace.sty` file is part of the `texlive-latex-recommended` package; the `endfloat.sty` file is part of the `texlive-latex-extra` package; and the `lineno.sty` file is part of the `texlive-humanities` package.

In addition to `ascelike.cls`, the file `ascelike.bst` can be used with the bibliographic tool BIB_TE_X to produce ASCE-like reference citations and entries (with the weird use of quotation marks around titles, etc.) (Kuhn 2011). An example bibliographic data base is given in the supplementary file `ascexmpl.bib`.

In addition to these essential files, we have found the following packages very useful:

- `graphicx.sty` and its companion files for incorporating encapsulated postscript (figure) files into the document
- `times.sty` for typesetting with Times fonts.
- `subfigure.sty` for arranging and numbering sub-figures
- `amsmath.sty` and its companion files for the AMS extensions to mathematical formatting (`amsfonts.sty`, `amssymb.sty`, and `amsbsy.sty`).
- `url.sty` can be used to embed the underscore “_” and ampersand “&” symbols with web addresses.

All of these packages are freely available from the CTAN archive, and they are included in most L^AT_EX distributions.

INPUT AND OPTIONS

You should prepare your `*.tex` input file as a regular L^AT_EX file using the standard `article.cls` constructs, but, of course, substituting `ascelike` for `article` in the opening `\documentclass` command. You will likely need to specify a number of options as described below. In addition, `ascelike` provides two new commands: `KeyWords` and `NameTag`, both of which are described further below.

The document class `ascelike.cls` provides several options given below. The `Proceedings|Journal|NewProceedings` option is the most important; the other options are largely incidental.

1. Options `Journal|Proceedings|NewProceedings` specify the overall for-

mat of the output manuscript.

Journal produces double-spaced manuscripts for ASCE journals. As default settings, it places tables and figures at the end of the manuscript and produces lists of tables and figures. It places line numbers within the left margin. All of these default settings can be altered with the options that are described below. It also numbers the appendices with Roman numerals and produces proper headings for sections, subsections, subsubsections, appendices, and abstract. It produces the proper page margins and numbers the pages.

Proceedings produces older-style camera-ready single-spaced manuscripts for ASCE conference proceedings. The newer ASCE style is enacted with the **NewProceedings** option. As default settings, **Proceedings** places figures and tables within the text. It does not place line numbers within the left margin. Pages are numbered, and the bottom left corner can be “tagged” with the author’s name (this can be done by inserting the command `\NameTag{<your name>}` within the preamble of your document). All of these default settings can be altered with the options that are described below. **Proceedings** also produces the proper page margins as given on the old shiny, camera-ready paper (with the light blue lines) supplied by ASCE. It produces proper headings for sections, subsections, subsubsections, appendices, and the abstract.

NewProceedings produces newer-style single-spaced manuscripts for ASCE conference proceedings, as shown on the ASCE website (*ca.* 2013). The older ASCE style is enacted with the **Proceedings** option. As default settings, **NewProceedings** places figures and tables within the text. It does not place line numbers within the left margin. Pages are not numbered. If desired, the bottom left corner can be “tagged” with the author’s name (this can be done by inserting the command `\NameTag{<your name>}` within the preamble of your document). All of the default settings can be altered with the options that are described below. **NewProceedings** also produces the proper page margins as specified by ASCE. It produces proper headings for sections, subsections, subsubsections, appendices, and the abstract. To create author addresses that do *not* appear as footnotes, use the kluge that is described on page 7 and in this `ascexmpl.tex` example.

2. Options **BackFigs|InsideFigs** can be used to override the default placement of tables and figures in the **Journal**, **Proceedings**, and **NewProceedings** formats.
3. Options **SingleSpace|DoubleSpace** can be used to override the default text spacing in the **Journal**, **Proceedings**, and **NewProceedings** formats.
4. Options **10pt|11pt|12pt** can be used to override the default text size (12pt).
5. The option **NoLists** suppresses inclusion of lists of tables and figures that would normally be included in the **Journal** format.

6. The option `NoPageNumbers` suppresses the printing of page numbers.
7. The option `SectionNumbers` produces an automatic numbering of sections. Without the `SectionNumbers` option, sections will *not* be numbered, as this seems to be the usual formatting in ASCE journals (note that the appendices will, however, be automatically “numbered” with Roman numerals). With the `SectionNumbers` option, sections and subsections are numbered with Arabic numerals (e.g. 2, 2.1, etc.), but subsubsection headings will not be numbered. To change this default depth of numbering when the option `SectionNumbers` is invoked, insert the following commands in the preamble of your document:

```
\setcounter{secnumdepth}{1}   Number sections only
\setcounter{secnumdepth}{3}   Number sections, subsections,
                               and subsubsections
```

Even with the `SectionNumbers` option, you can use the “starred” form, `\section*{ }`, to create a section heading without numbers. This might be desirable for an Acknowledgements section at the end of a paper. Note, however, that the starred form will not suppress the numbering of subsections or subsubsections.

8. The options `NoLineNumbers|LineNumbers` can be used to override the default use (or absence) of line numbers in the `Journal`, `Proceedings`, and `NewProceedings` formats.

SECTIONS, SUBSECTIONS, EQUATIONS, ETC.

This section is included to explain and to test the formatting of sections, subsections, subsubsections, equations, tables, and figures. Section heading are automatically made uppercase, which is great unless your section heading contains mathematics, `$<math stuff>$`. If a heading does contain mathematics, you will need to modify `ascelike.cls`, in particular the line containing the `\uppercase` command. To force mathematics symbols to become bold within a section heading, try using the `\boldmath` command before the in-line math: for example, `\boldmath$a_{i}=\sqrt{\beta}$`.

An Example Subsection with math, $a_i = \sqrt{\beta}$

No automatic capitalization occurs with subsection headings; you will need to capitalize the first letter of each word, as in “An Example Subsection.”

An example subsubsection

No automatic capitalization occurs with subsubsections; you will need to capitalize only the first letter of subsubsection headings.

And now we include an example of a displayed equation (Eq. 1)

$$E = mc^2, \tag{1}$$

a figure (Fig. 1), and a table (Table 1). Notice that the caption of Fig. 1 contains a citation of a bibliographic item (Stahl et al. 2004). This can lead to the following error message:

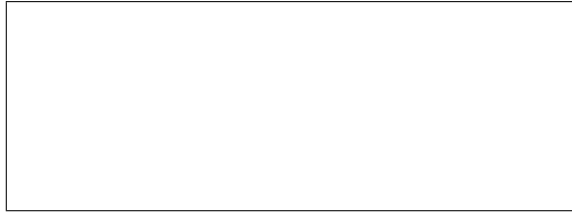


FIG. 1. An example figure (just a box). This particular figure has a caption with more information than the figure itself, a very poor practice indeed. A reference here (Stahl et al. 2004).

TABLE 1. An example table

Assembly Attribute	Values
(1)	(2)
Number of particles	4008
Particle sizes	Multiple
Particle size range	$0.45D_{50}^*$ to $1.40D_{50}$
Initial void ratio, e_{init}	0.179
Assembly size	$54D_{50} \times 54D_{50} \times 54D_{50}$
* D_{50} represents the median particle diameter	

```
! Illegal parameter number in definition of \reserved@a.
! Missing control sequence inserted
```

These errors are avoided by protecting citations within captions, with the command `\protect\cite{...}`.

The command `\KeyWords{<your key words>}` can be used to produce a labeled list of key words. It can be placed anywhere in the document and produces an unindented paragraph of keywords at that location.

The command `\NameTag{<your name>}` can be placed within the preamble of your document, which will produce a name and date tag in bottom left corner of the page. Do not use `\NameTag` in combination with the `NoPageNumbers` option, as the former will be ignored.

CITATIONS AND BIBLIOGRAPHIC ENTRIES

When used together, `ascelike.cls` and `ascelike.bst` produce APA / *Chicago Manual of Style* citations in name-date format. The code in `ascelike.bst` is a modification of the `chicago.sty` and `chicago.bst` packages. The following citation options are available:

- `\cite{key}` produces citations with full author list and year (Ireland 1954).

- `\citeNP{key}` produces citations with full author list and year, but without enclosing parentheses: e.g. Ireland 1954.
- `\citeA{key}` produces citations with only the full author list: e.g. (Ireland)
- `\citeN{key}` produces citations with the full author list and year, but which can be used as nouns in a sentence; no parentheses appear around the author names, but only around the year: e.g. Ireland (1954) states that ...
- `\citeyear{key}` produces the year information only, within parentheses, as in (1954).
- `\citeyearNP{key}` produces the year information only, as in 1954.

The bibliographic data base `ascexmpl.bib` gives examples of bibliographic entries for different document types. These entries are from the canonical set in the ASCE web document “Instructions For Preparation Of Electronic Manuscripts” and from the ASCE web-site. The References section of this document has been automatically created with the `ascelike.bst` style for the following entries:

- a book (Goossens et al. 1994),
- an anonymous book (Moody 1988),
- an anonymous report using `@MANUAL` (Federal 1991),
- a journal article (Stahl et al. 2004; Pennoni 1992),
- a journal article in press (Dasgupta 2008),
- an article in an edited book using `@INCOLLECTION` (Zadeh 1981),
- a building code using `@MANUAL` (International 1988),
- a discussion of an `@ARTICLE` (Vesilind 1992),
- a masters thesis using `@MASTERSTHESIS` (Sotiropulos 1991),
- a doctoral thesis using `@PHDTHESIS` (Chang 1987),
- a paper in a foreign journal (Ireland 1954),
- a paper in a proceedings using `@INPROCEEDINGS` (Eshenaur et al. 1991; Garrett 2003),
- a standard using `@INCOLLECTION` (ASTM 1991),
- a translated book (Melan 1913),
- a two-part paper (Frater and Packer 1992a; Frater and Packer 1992b),
- a university report using `@TECHREPORT` (Duan et al. 1990),
- an untitled item in the Federal Register using `@MANUAL` (Federal 1988),
- works in a foreign language (Duvant and Lions 1972; Reiffenstuhel 1982),
- software using `@MANUAL` (Lotus 1985),
- two works by the same author in the same year (Gaspar and Koenders 2001a; Gaspar and Koenders 2001b), and
- two works by three authors in the same year that only share the first two authors (Huang et al. 2009a; Huang et al. 2009b).

ASCE has added two types of bibliographic entries: web-pages and CD-ROMs. A web-page can be formatted using the `@MISC` entry category, as with the item

(Burka 1993) produced with the following *.bib entry:

```
@MISC{Burka:1993a,  
  author = {Burka, L. P.},  
  title = {A hypertext history of multi-user dimensions},  
  journal = {MUD history},  
  year = {1993},  
  month = {Dec. 5, 1994},  
  url = {http://www.ccs.neu.edu}  
}
```

Notice the use of the “month” field to give the date that material was downloaded and the use of a new “url” field. The “url” and month” fields can also be used with other entry types (i.e., @BOOK, @INPROCEEDINGS, @MANUAL, @MASTERSTHESIS, @PHDTHESIS, and @TECHREPORT): for example, in the entry type @PHDTHESIS for (Wichtmann 2005).

A CD-ROM can be referenced when using the @BOOK, @INBOOK, @INCOLLECTION, or @INPROCEEDINGS categories, as in the entry (Liggett and Caughey 1998). The field “howpublished” is used to designate the medium in the .bib file:

```
howpublished = {CD-ROM},
```

MISCELLANY

Most ASCE conference proceedings are now published on CD ROM media. I have noticed that instructions on paper formats issued by conference organizers often differ from the standard ASCE instructions. Fortunately most of the differences can be easily accommodated, such as changes in the margins and placement of the authors’ addresses. As for margins, these can, of course, be altered by using `\setlength{<length>}` commands within the preamble to a document without making any changes to `ascelike.cls`. (See the \LaTeX book (Lamport 1994), its companion (Goossens et al. 1994), or online web documentation.)

Multiple authors from the same institution can be handled within the `\author{...}` command by using the `\footnotemark` command:

```
\\  
Ima Colleague,\footnotemark[1] Member, ASCE%
```

Authors’ addresses can be placed below the title (instead of in a footnote) by *not* using the `\thanks` command, replacing it with superscripts `1`, carriage returns “\\”, and `\parbox`’s. An example is shown in the `ascexmpl.tex` file.

WISH LIST

I would like to enable the `a4paper` option and could use some advice about passing this option to `article` so that the `article.cls` commands for `\paperheight` and `\paperwidth` are executed. I am also uncertain about using `a4paper` as a Boolean to set page margins.

REFERENCES

- ASTM (1991). "Standard practice for the use of the international system of units (SI) (the modernized metric system)." *E 380-91a*, ASTM, Philadelphia, Pa.
- Burka, L. P. (1993). "A hypertext history of multi-user dimensions." *MUD history*, <<http://www.ccs.neu.edu>> (Dec. 5, 1994).
- Chang, T. C. (1987). "Network resource allocation using an expert system with fuzzy logic reasoning." Ph.D. thesis, University of California, Berkeley, CA.
- Dasgupta, G. (2008). "Stiffness matrix from isoparametric closed form shape functions using exact integration." *J. Aerosp. Eng.* in press.
- Duan, L., Loh, J. T., and Chen, W. F. (1990). "M-P-f-based analysis of dented tubular members." *Struct. Engrg. Rep. No. CE-STR-90-27*, School of Civ. Engrg., Purdue Univ., West Lafayette, Ind.
- Duvant, G. and Lions, J. L. (1972). *Les inéquations en mécanique et en physique*. Dunod, Paris, France (in French).
- Eshenaur, S. R., Kulicki, J. M., and Mertz, D. R. (1991). "Retrofitting distortion-induced fatigue cracking of non-composite steel girder-floorbeam-stringer bridges." *Proc., 8th Annual Int. Bridge Conf.*, Engineers' Soc. of Western Pennsylvania, Pittsburgh, Pa., 380–388.
- Federal Register* (1988). 33(No. 146; July 27), 10756.
- Federal Highway Administration (FHWA) (1991). *Evaluating scour at bridges*. Rep., Hydr. Engrg. Circular No. 18: FHWA-IP-90-017, Washington, D.C.
- Frater, G. S. and Packer, J. A. (1992a). "Weldment design for RHS truss connections. I: Applications." *J. Struct. Engrg.*, ASCE, 118(10), 2784–2803.
- Frater, G. S. and Packer, J. A. (1992b). "Weldment design for RHS truss connections. II: Experimentation." *J. Struct. Engrg.*, ASCE, 118(10), 2804–2820.
- Garrett, D. L. (2003). "Coupled analysis of floating production systems." *Proc., Int. Symp. on Deep Mooring Systems*, (CD-ROM), ASCE, Reston, VA, 152–167.
- Gaspar, N. and Koenders, M. A. (2001a). "Estimates of the shear modulus of a granular assembly using heterogeneous media techniques." *Powders and Grains 2001*, Y. Kishino, ed., A.A. Balkema, Lisse, 389–392.
- Gaspar, N. and Koenders, M. A. (2001b). "Micromechanic formulation of macroscopic structures in a granular medium." *J. Engrg. Mech.*, 127(10), 987–993.
- Goossens, M., Mittlebach, F., and Samarin, A. (1994). *The L^AT_EX Companion*. Addison–Wesley Pub. Co., Reading, Mass.
- Huang, Y., Bird, R., and Bell, M. (2009a). "A comparative study of the emission by road maintenance works and the disrupted traffic using life cycle assessment and micro-simulation." *Transportation Research Part D*, 14, 197–204.
- Huang, Y., Bird, R., and Hendrich, O. (2009b). "Development of a life cycle assessment tool for construction and maintenance of asphalt pavements." *Journal of Cleaner Production*, 17, 283–296.
- International Conference of Building Officials (1988). *Uniform building code*. Whittier, Calif.
- Ireland, H. O. (1954). "Stability analysis of Congress Street open cut in Chicago."

- Géotechnique*, London, England, 4(4), 163–168.
- Kuhn, M. R. (2011). “Style files for ASCE-like documents.” *ascelike*, <<http://www.ctan.org/tex-archive/macros/latex/contrib/ascelike>> (Nov. 17, 2011).
- Lamport, L. (1994). *LaTeX: A Document Preparation System User's Guide and Reference Manual*. Addison–Wesley Pub. Co., Reading, Mass.
- Liggett, J. A. and Caughey, D. A. (1998). “Fluid statics.” *Fluid mechanics*, (CD-ROM), ASCE, Reston, VA, Chapter 2, 167–177.
- Lotus 1-2-3 reference manual; release 2.01* (1985). Lotus Development Corp., Cambridge, Mass.
- Melan, J. (1913). *Theory of arches and suspension bridges*. Myron C. Clark, Chicago, Ill D. B. Steinman, translator.
- Moody's municipal & government manual* (1988). Moody's Investors Service, New York, N.Y.
- Pennoni, C. R. (1992). “Visioning: the future of civil engineering.” *J. Prof. Issues in Engrg. Education and Practice*, ASCE, 118(3), 221–233.
- Reiffenstuhl, H. (1982). “Das vorspannen von bewehrung auf druck: Grundsätzliche und anwendungsmöglichkeiten [prestressing of reinforcing in compression: fundamentals and application possibilities].” *Beton-und Stahlbetonbau*, Berlin, Germany, 77(3), 69–73 (in German).
- Sotiropoulos, S. N. (1991). “Static response of bridge superstructures made of fiber reinforced plastic.” M.S. thesis, West Virginia Univ., Morgantown, WV.
- Stahl, D. C., Wolfe, R. W., and Begel, M. (2004). “Improved analysis of timber rivet connections.” *J. Struct. Eng.*, 130(8), 1272–1279.
- Vesilind, P. A. (1992). “Discussion of ‘Guidance for engineering-design-class lectures on ethics,’ by Richard H. McCuen.” *J. Prof. Issues in Engrg. Education and Practice*, ASCE, 118(2), 214–215.
- Wichtmann, T. (2005). “Explicit accumulation model for non-cohesive soils under cyclic loading.” Ph.D. thesis, Institute for Soil Mechanics and Foundation Engineering, Ruhr-Univ. Bochum, Germany, , <www.rz.uni-karlsruhe.de/~gn97/> (2007).
- Zadeh, L. A. (1981). “Possibility theory and soft data analysis.” *Mathematical frontiers of the social and policy sciences*, L. Cobb and R. M. Thrall, eds., Westview Press, Inc., Boulder, Colo., 69–129.

APPENDIX I. NOTATION

The following symbols are used in this paper:

- D = pile diameter (m);
- R = distance (m); and
- $C_{\text{Oh no!}}$ = fudge factor.